



A PRACTITIONER'S SUMMARY

GENTRIFICATION AND RESIDENTIAL MOBILITY IN PHILADELPHIA

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INTRODUCTION

Gentrification has provoked considerable debate and controversy over how it affects neighborhoods and the people residing in them. The term *gentrification* has often been used to describe neighborhood changes that are characterized by an influx of new residents of a higher socioeconomic status relative to incumbent residents and by rising housing values. While many have associated gentrification with residential displacement, supported by neighborhood-level demographic changes taking place in gentrifying neighborhoods and anecdotal accounts, the empirical evidence on the relationship between gentrification and residential displacement, however, is far from conclusive, finding no significant evidence of higher mobility rates among existing vulnerable residents in gentrifying neighborhoods. Moreover, existing evidence offers little insight into the dynamics of residential mobility in gentrifying neighborhoods, particularly among vulnerable residents.

Our study sheds light on these issues by using a unique individual-level data set, the Federal Reserve Bank of New York Consumer Credit Panel/Equifax (CCP), to study the relationships between gentrification and the mobility patterns and financial health among residents in Philadelphia from 2002 to 2014. The CCP data consist of an anonymized 5 percent random sample of variables contained in the credit bureau records of U.S. consumers.¹ The data include the census geography identifiers associated with each consumer's credit file, so we are able to identify whether an individual has moved across neighborhoods. We find that residents in gentrifying neighborhoods in Philadelphia have slightly higher mobility rates, but more vulnerable residents (residents who have no credit scores² or credit scores below 580, as well as long-term residents) are not more likely to exit gentrifying neighborhoods. In

other words, when compared with the moving behavior of similar residents in nongentrifying neighborhoods, the mobility rates of more vulnerable residents in gentrifying neighborhoods are not significantly higher. While this result initially may seem counterintuitive given the increases in housing and living costs, this is not surprising in other respects: Improvement in neighborhood conditions and services could make a gentrifying neighborhood more attractive, providing greater incentive to stay in gentrifying neighborhoods even though they may need to bear higher living costs, and new infill development or previously high vacancy rates may limit displacement pressures on preexisting residents. These gentrifying neighborhoods, however, have become less accessible for disadvantaged residents, making more vulnerable movers less likely to move into them. Each year, more low-score residents, who are more likely to be low-income and minority,³ move out of gentrifying neighborhoods than those who move into these neighborhoods. Therefore, the socioeconomic upgrading of the populations of gentrifying neighborhoods is more so due to the in-movement of higher socioeconomic status residents rather than the out-movement of disadvantaged residents.

The empirical results further suggest that disadvantaged residents generally gained less from gentrification than others, and those who were unable to remain in gentrifying neighborhoods had negative residential and financial outcomes in the gentrification process. Disadvantaged movers have a higher risk of moving into lower-income neighborhoods or to neighborhoods with lower values on quality-of-life indicators. For example, low-score outmovers from gentrifying neighborhoods, who often have shorter credit histories and were hit harder during the Great Recession, are more likely to move to neighborhoods with lower incomes, higher crime rates, low-performing public schools, and/or higher unemployment rates than others. High-score movers from gentrifying neighborhoods, however, are more likely to move to neighborhoods that perform better on these metrics. Movers who moved to a neighborhood in a lower-income quintile experienced a more

¹ The sample is constructed by selecting consumers with at least one public record or one credit account currently reported and with one of five numbers in the last two digits of their Social Security numbers (SSNs). The CCP data do not include actual SSNs. See more details of the data in Lee and van der Klaauw (2010) at www.newyorkfed.org/research/staff_reports/sr479.html.

² Throughout this article, credit score is measured by the Equifax risk score, a widely used credit score produced by Equifax. Only the following variables mentioned in this paper are from the CCP data: credit score (Equifax risk score), length in residency, age, household size, delinquent accounts, and mortgage status.

³ Bostic, Raphael W., Paul S. Calem, and Susan M. Wachter. 2005. "Hitting the Wall: Credit as an Impediment to Homeownership." In Nicolas P. Retsinas and Eric S. Belsky (eds.), *Building Assets, Building Credit: Creating Wealth in Low-Income Communities* (pp. 155–172). Washington, D.C.: Brookings Institution Press.

significant decline in their credit scores, suggesting that neighborhood economic distress could be closely linked to an individual's financial challenges. We also find that the benefits from gentrification on residents' financial health are concentrated in neighborhoods experiencing more rapid gentrification and accruing primarily to residents who are younger and better off financially. Overall, more vulnerable groups experienced less improvement in their credit ratings.

This report intends to provide answers to the following five questions related to gentrification based on the major findings from our full report:⁴

1. Which neighborhoods in Philadelphia are gentrifying?
2. Do residents in gentrifying neighborhoods have higher risks of moving/displacement?
3. What are the mobility patterns of more vulnerable residents in gentrifying neighborhoods?
4. Who is moving into gentrifying neighborhoods?
5. How does gentrification affect the financial health of existing residents?

1. Which Neighborhoods in Philadelphia Are Gentrifying?

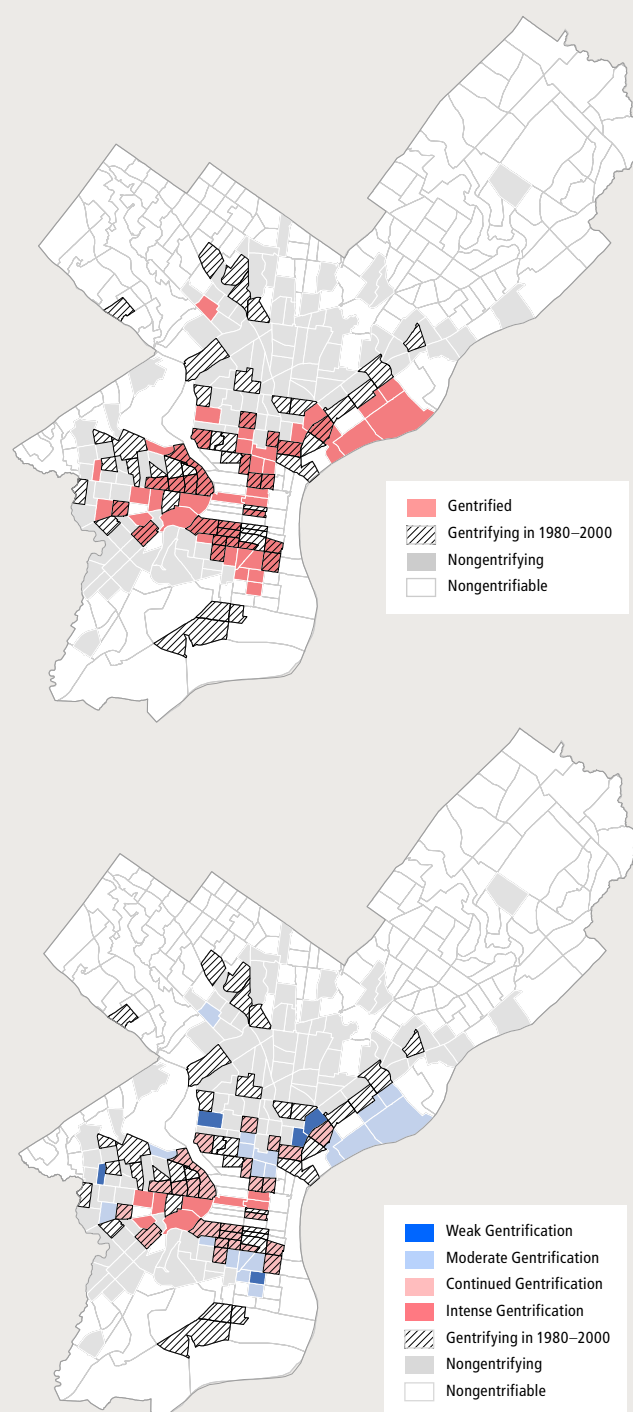
Of Philadelphia's 365 tracts with substantial population, we categorized 56 tracts as gentrifying from 2000 to 2013 (Figure 1, top), out of a total of 184 that were gentrifiable. These tracts are primarily located in areas in and around Center City — Philadelphia's downtown area — or in areas adjacent to the University of Pennsylvania or Temple University. We further divide the gentrifying neighborhoods into five neighborhood clusters: Center City, West Philadelphia, South Philadelphia, Lower North, and River Wards (see the Appendix for a detailed discussion of each cluster).

In order for tracts to gentrify, they must have been lower income at the beginning of the period. Thus, we consider tracts to be *gentrifiable* if they had a median household income below the citywide median in the beginning of the study period. We consider a tract to be *gentrifying* over the 2000–2013 period if it was gentrifiable in 2000

⁴ Ding, Lei, Jackelyn Hwang, and Eileen Divringi. 2015. "Gentrification and Residential Mobility in Philadelphia." Community Development Studies & Education Discussion Paper, Federal Reserve Bank of Philadelphia. Available at www.philadelphiafed.org/community-development/publications/discussion-papers.

FIGURE 1

Gentrifying Neighborhoods in the City of Philadelphia



Source: Authors' definition based on Census 2000 and 2009–2013 American Community Survey data and U.S. Census TIGER/Line Shapefiles.

and experienced both an above citywide median percentage increase in either its median gross rent or median home value *and* an above citywide median increase in its share of college-educated residents. We rely on housing values and rents because they reflect the quality of various amenities, as well as investment, in the neighborhood.⁵ Because gentrification is a dynamic process and can occur at varying paces, we also constructed more refined categories of gentrification to assess if mobility patterns matter at varying stages of gentrification. Figure 1 (bottom) presents a map of Philadelphia census tracts and their various gentrification categories, and Table 1 provides a detailed description of these categories.

Gentrifying neighborhoods saw larger increases in total population, total non-Hispanic white population, home

⁵ We include changes in *either* rents or home values because these changes do not necessarily occur in step with each other but nonetheless indicate changing affordability in a previously low-income neighborhood. Additionally, we include criteria for both demographic and price changes to avoid misidentifying gentrification in neighborhoods experiencing housing price spillovers without demographic changes.

value, rent, educational attainment, household income, as well as a greater decline in poverty rate than did low-income nongentrifying neighborhoods from 2000 to 2013 (Table 2). By definition, home values, rents, as well as educational attainment grew more steeply in the gentrifying neighborhoods. In addition, gentrifying and nongentrifying neighborhoods experienced different economic fates: The average growth in median household income in gentrifying neighborhoods was 41.9 percent from 2000 to 2013, compared with an 18.2 percent decrease in nongentrifying neighborhoods. There was a significant decline in the poverty rate (a decline of 4.3 percentage points) in neighborhoods classified as gentrifying, while there was an increase (4.8 percentage points) in nongentrifying neighborhoods.

Gentrifying neighborhoods recorded an increase of 2.3 percent in total population and an increase by 23 percent in the number of non-Hispanic white residents from 2000 to 2013. In contrast, lower-income neighborhoods that did not gentrify experienced a population

TABLE 1

Gentrification Measure (Categorical)

Categories		# of Tracts	Explanation
Nongentrifiable	Nongentrifiable	168	Nongentrifiable in 1980, 1990, and 2000
	Old gentrification	13	Pre-2000 gentrification (1980–2000 or 1990–2000) and no longer gentrifiable in 2000
Nongentrifying	Nongentrifying	105	Nongentrifying, pre-2000 and 2000–2013
	Stalled gentrification	23	Pre-2000 gentrification and not gentrifying 2000–2013
Gentrifying	Continued gentrification	24	Pre-2000 gentrification and gentrifying 2000–2013
	Weak gentrification	5	Gentrifying but in the bottom quartile of gentrifying tracts for rent and value in 2009–2013
	Moderate gentrification	19	Gentrifying and in the 2nd or 3rd quartile for either rent or value in 2009–2013
	Intense gentrification	8	Gentrifying and in the top quartile for rent or value in 2009–2013

Source: Authors’ calculations using data from 1980, 1990, 2000 Censuses and 2009–2013 American Community Survey.

TABLE 2

Neighborhood Characteristics by Gentrification Status, Philadelphia

	Nongentrifying	Gentrifying	Nongentrifiable
Initial neighborhood condition, 2000			
Total population	555,827	209,421	745,870
% of non-Hispanic white	16.0%	33.8%	64.8%
% of non-Hispanic black	65.4%	50.2%	24.9%
% of renters	42.7%	53.5%	33.6%
Median household income in 2000 \$	\$21,895	\$21,042	\$43,366
% of college-educated	8.4%	16.5%	27.8%
Median age	32	33	38
Median rent in 2000 \$	\$560	\$577	\$801
Change in neighborhood indicators, 2000–2013			
% change in total population	-1.9%	2.3%	3.5%
% change in non-Hispanic white	-31.7%	22.8%	-14.5%
% change in non-Hispanic black	-4.7%	-26.5%	17.7%
Average % change in median household income	-18.2%	41.9%	-7.2%
Average change in % college-educated	1.5%	16.4%	6.3%
Change in median age	0.35	-0.69	0.35
Average change in poverty rate (%)	4.8%	-4.3%	3.8%
Average change in median home value	65.8%	163.3%	61.0%
Average change in median rent	5.5%	42.6%	12.9%
% change in the share of cost-burdened	10.4%	5.3%	11.7%
Number of tracts	128	56	181

Note: A total of 16 tracts were excluded because they either had no or extremely small populations (less than 50); authors' calculations using data from Census 2000 and 2009–2013 American Community Survey.

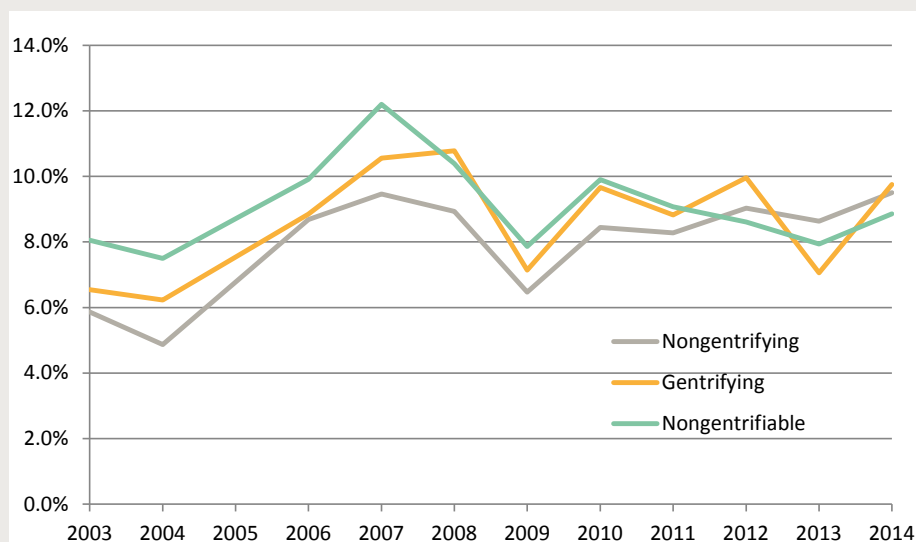
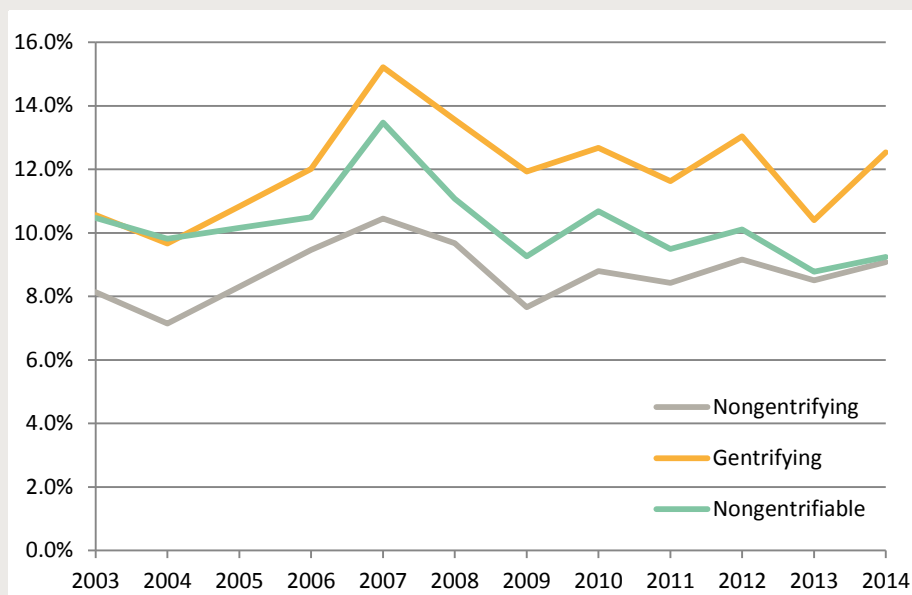
loss (-1.9 percent) and a significant decline in the share of non-Hispanic whites (-31.7 percent) during the same period. At the same time, the median age of residents in gentrifying neighborhoods declined (0.7 year decline from 2000 to 2013), while the median age in non-gentrifying neighborhoods increased (0.4 year increase). This increase in whites and younger residents is consistent with what might be expected in gentrifying neighborhoods.

2. Do Residents in Gentrifying Neighborhoods Have Higher Risks of Moving/Displacement?

The answer is yes; residents in gentrifying neighborhoods had a higher probability of moving, but we generally do not find consistent evidence of downward mobility (moving to a neighborhood with lower income). The CCP data allow us to identify whether an individual has moved across neighborhoods and to track the origin and destination neighborhoods of a mover. A comparison of the observed annual mobility rates suggests residents in gentrifying neighborhoods had *higher* mobility rates (Figure 2, top): Each year, about 10 to 15 percent of residents between the ages of 18 and 84 in gentrifying neighborhoods moved to other neighborhoods, almost 2 to 3 percentage points higher than for residents in nongentrifying tracts. The gap between gentrifying neighborhoods and nongentrifying neighborhoods did not change much during and after the housing crisis. Individuals with low risk scores residing in gentrifying neighborhoods had

FIGURE 2

Annual Mobility Rate by Neighborhood Type (All Residents, Top; Low-Score Residents, Bottom), Philadelphia



Note: Low-score residents include individuals with no credit scores or with credit scores below 580; authors' calculations using data from the FRBNY Consumer Credit Panel/Equifax.

slightly higher mobility rates (0.7 percentage point higher on average) during the study period (except one year) than those in nongentrifying tracts (Figure 2, bottom).

Regression results that take into account various characteristics of residents, such as age, household size, mort-

TABLE 3

Gentrification and Residential Mobility (Summary of Coefficients from Different Linear Probability Regressions)

	Move (Any Move)			Move to a Lower-income Tract (Movers Only)		
	All individuals	Individuals with mortgages	Individuals without mortgages	All individuals	Individuals with mortgages	Individuals without mortgages
Gentrify	0.004**	-0.001	0.005***	-0.002	0.002	-0.002
Gentrification type (from different models)						
Weak gentrification	-0.011***	-0.009	-0.011***	-0.002	0.014	-0.004
Moderate gentrification	-0.005**	-0.006	-0.006**	0.020**	0.023	0.020*
Intense gentrification	0.036***	0.032***	0.034***	-0.006	0.015	-0.016
Continued gentrification	0.017***	0.000	0.022***	-0.023**	-0.033*	-0.020*

Note: From linear probability regressions using pooled data (2003–2014); ***, **, * represent significant at 0.01, 0.05, or 0.1 level, respectively; estimation is based on data from Census 2000, 2009–2013 American Community Survey, and the FRBNY Consumer Credit Panel/Equifax.

gage status, and credit score, confirm that residents in the gentrifying neighborhoods have a slightly higher probability of moving, which is largely driven by those neighborhoods experiencing more intense levels of gentrification. Table 3 summarizes the coefficients of the gentrification variables; a significant and positive coefficient indicates that the particular group is more likely to move (or move downward). At the aggregate level, gentrification is associated with a slightly higher probability of moving (0.4 percentage point higher). The probability of moving is much higher in neighborhoods that gentrified more rapidly (*intense-gentrification*, 3.6 percentage points higher) or in neighborhoods that had been gentrifying since before 2000 (*continued-gentrification*, about 1.7 percentage points higher), which suggests that the higher risk of moving may only be evident in neighborhoods rapidly gentrifying or in those in the later stages of gentrification.

Given our interest in displacement, which implies an involuntary move, we consider whether residents move to

neighborhoods that are more economically distressed than the gentrifying neighborhoods in which they previously resided. Thus, we further distinguish a move to a neighborhood with a lower median income than the origin neighborhood (*move_downward*) from other types of moves.⁶ There is no significant evidence of downward mobility for residents moving from gentrifying neighborhoods at the aggregate level, though results for vulnerable groups are very different and are discussed in the next section. While the results may seem counterintuitive, as we will show, movers from gentrifying neighborhoods are quite heterogeneous, consisting of many lower-income residents, as well as younger and high-score residents moving to more expensive neighborhoods, relative to movers from nongentrifying neighborhoods. Thus, it is not surprising that movers out of gentrifying neighborhoods are generally no more

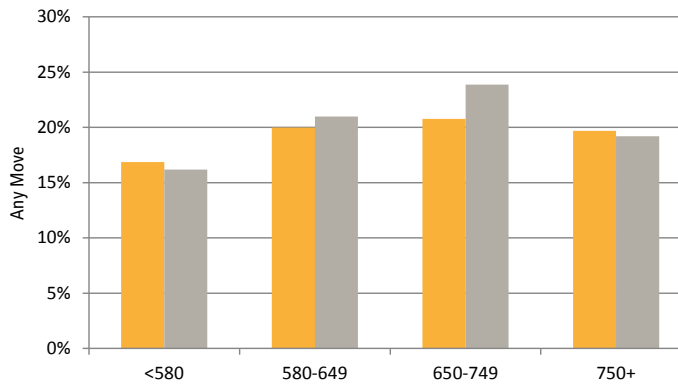
⁶ Neighborhood household income quintiles, instead of the absolute values of neighborhood income, are used to compare the relative income level of different neighborhoods.

FIGURE 3

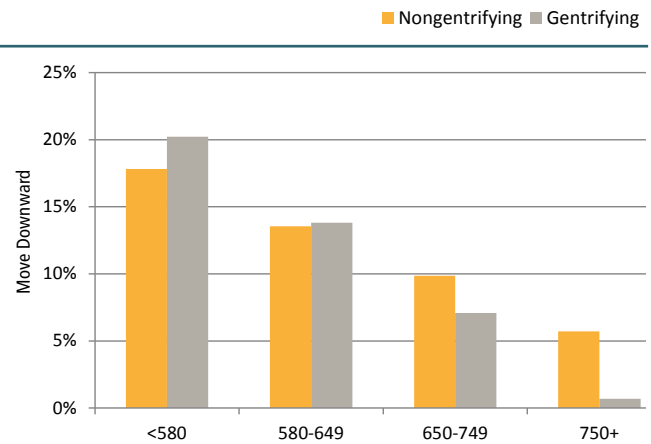
Predicted Mobility Rates

Predicted Mobility Rates for Different Subpopulations

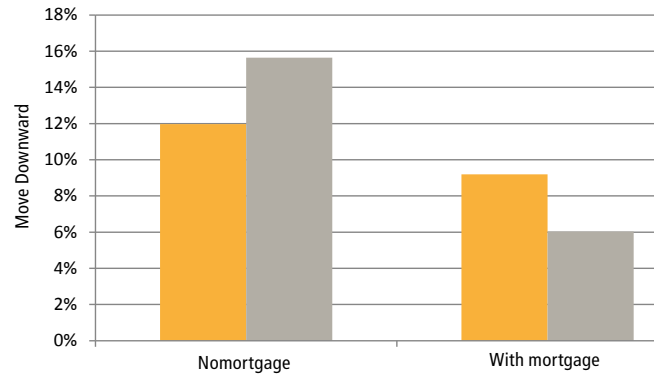
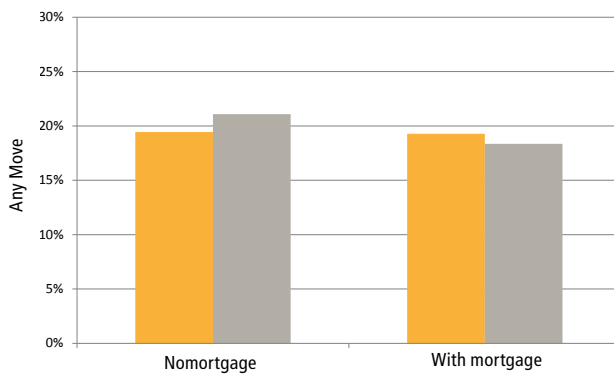
Equifax Risk Score



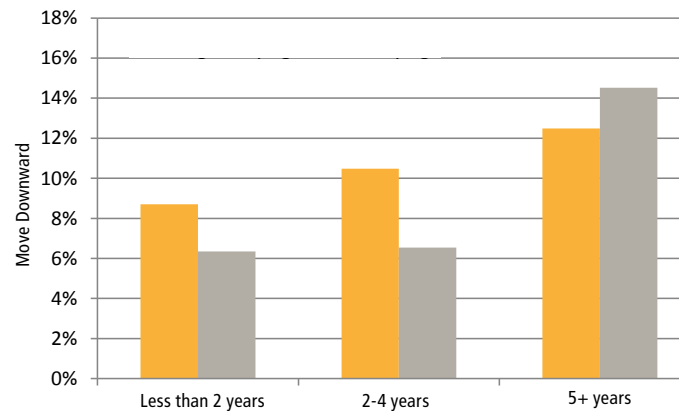
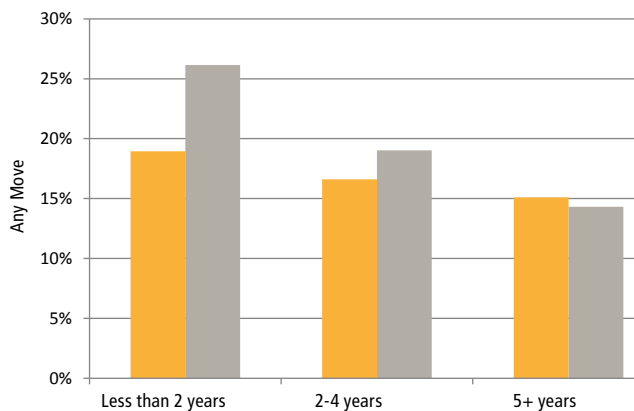
Predicted Downward Mobility Rates for Different Subpopulations



Mortgage Status



Length in Residency



Note: Based on linear probability regressions using pooled data from the FRBNY Consumer Credit Panel/Equifax (2003–2014); estimation is for a typical resident (or mover) in a gentrifiable neighborhood; differences between vulnerable residents are generally significant at the 0.01 level.

likely to move downward than those in nongentrifying neighborhoods.

3. What Are the Mobility Patterns of More Vulnerable Residents in Gentrifying Neighborhoods?

We also focus on various subpopulations (low-score residents, residents without mortgages, and longer-term residents) that may be more vulnerable to involuntary moves. Results suggest that, except those without mortgages, these more vulnerable residents are generally no more likely to move than other populations. Figure 3 shows the predicted mobility rates and the probabilities of moving downward among movers for different subpopulations. Low-score residents and long-term residents are generally less likely to move out of gentrifying neighborhoods than their corresponding comparison groups, though residents without mortgag-

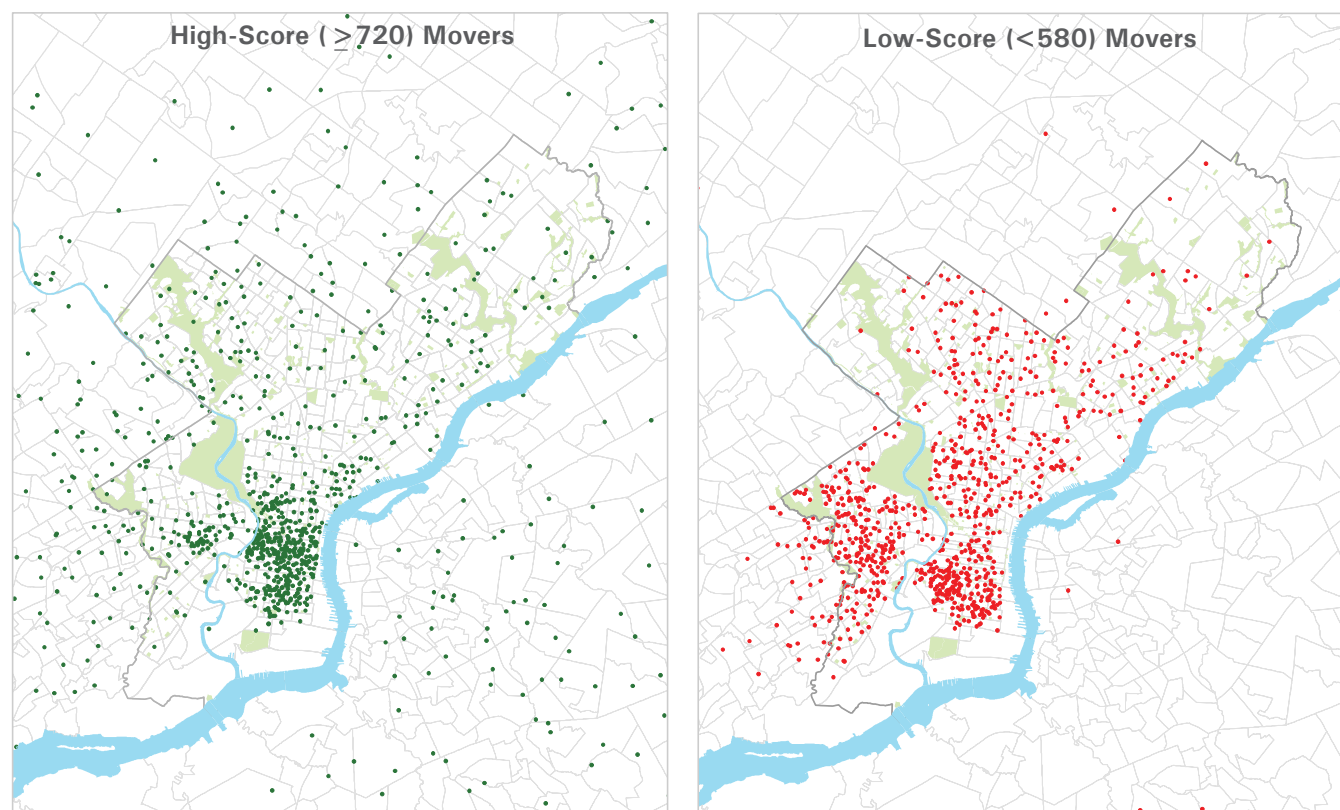
es who are likely renters are more likely to move from gentrifying neighborhoods. The estimated moving rate is 16.2 percent for a typical resident⁷ in a gentrifying neighborhood, lower than the 16.9 percent for a similar resident in a nongentrifying neighborhood. But for those with credit scores between 650 and 749, the likelihood of moving out is higher if they reside in gentrifying neighborhoods (23.9 percent) than that of those residing in nongentrifying neighborhoods (20.7 percent).

We suspect that there are likely two competing forces for disadvantaged residents in gentrifying neighborhoods: Gentrification may be increasing interneighborhood

⁷ A typical resident is defined as one with an average risk score, 25–34 years old, with a household size of two, without a mortgage, with one or more delinquent accounts, in a neighborhood with mean values on neighborhood characteristics for the period of 2006–2007.

FIGURE 4

Destination Tracts of Movers from Gentrifying Neighborhoods, 2003–2014



Note: Individuals 25–84 only, authors' calculations using data from the FRBNY Consumer Credit Panel/Equifax. U.S. Census TIGER/Line Shapefiles.

mobility as a result of rising rents and possibly increased property taxes, and it may also be decreasing mobility due to increased residential satisfaction with the improved neighborhood conditions and services and rising home values that come with gentrification. At the same time, new development and previously high vacancy rates in gentrifying neighborhoods may also reduce displacement pressures. Therefore, pre-existing residents may not necessarily have to move out of gentrifying neighborhoods given the increased residential satisfaction that gentrification may bring and the costs related to moving, especially in neighborhoods experiencing less intense rates of gentrification. As we observed, the aggregate effect is that more vulnerable residents are no more likely to move than other similar residents in nongentrifying neighborhoods.⁸

Vulnerable residents who are not able to remain in the neighborhood, however, face a higher risk of moving to a neighborhood that is worse off. Among all the movers, low-score movers are more likely to move within the city (Figure 4). After controlling for individual and neighborhood characteristics, we do find that more vulnerable residents are more likely to move to lower-income neighborhoods (Figure 3, right). The probability of moving to a lower-income neighborhood is about 20.2 percent for low-score outmovers from a gentrifying neighborhood, higher than the 17.8 percent probability for movers from a nongentrifying neighborhood. High-score movers from gentrifying neighborhoods are much less likely to move to lower-income neighborhoods. The likely renter movers from gentrifying neighborhoods have an even higher probability of moving to lower-income neighborhoods than do residents moving from nongentrifying neighborhoods. The pattern for longer-term residents is similar.

We further reviewed the neighborhood-level outcomes for residents who moved out of gentrifying neighborhoods in Philadelphia, identifying changes in indicators reflecting economic opportunity, demographic compo-

sition, and quality of life.⁹ In the aggregate, movers from gentrifying neighborhoods largely ended up in neighborhoods with significantly higher household incomes, lower unemployment rates, and higher home values. However, low-score movers — particularly those moving within Philadelphia — fared worse than the aggregate would suggest. Low-score movers from gentrifying neighborhoods overall tend to move to neighborhoods with similar economic profiles, in contrast to the improvements experienced by middle- and high-score movers. Intracity low-score movers, however, saw significant declines in median home values and increases in unemployment rates in their destination neighborhoods (Table 4).¹⁰ These results suggest that, within Philadelphia, the mobility patterns of movers from gentrifying neighborhoods result in the redistribution of financially distressed movers to neighborhoods that offer more limited economic prospects.

Changes in movers' neighborhood quality-of-life indicators mirror those of neighborhood economic indicators (Table 4). While in the aggregate, movers from gentrifying neighborhoods moved to tracts with higher-performing public elementary schools and lower rates of violent crime, low-score consumers largely ended up in tracts that were similar to those that they had left. Within the set of gentrifying neighborhoods, however, low-score movers were already concentrated in tracts that performed significantly worse on violent crime and school performance metrics relative to the origin tracts of higher-score movers.¹¹ Again, low-score intracity movers experienced the worst outcomes, moving to tracts with equally high violent crime rates and lower public school performance.

⁹ Economic and demographic indicators were derived from Census 2000 and 2009–2013 American Community Survey. Violent crime per 1,000 residents was calculated at the tract level using data from the Philadelphia Police Department and the FBI Uniform Crime Reporting Program. School performance data were accessed through the Pennsylvania Department of Education and the Federal Education Budget Project of the New America Foundation.

¹⁰ Counterintuitively, median household incomes in their destination tracts were somewhat higher, though to some extent, this may be confounded by the large presence of college students in certain gentrifying tracts. See Bishaw (2013) at www.census.gov/hhes/www/poverty/publications/papers-bishaw.html.

¹¹ For example, the average rate of violent crime per 1,000 residents in high-score movers' origin tracts was 6.5, compared with 9.0 in low-score movers' origin tracts.

⁸ The imperfect coverage of the CCP data set (for people without a credit file) may cause the analysis to underestimate the negative consequences for some of the most vulnerable groups.

TABLE 4

Changes in Neighborhood Indicators Between Origin and Destination Tracts
All Movers from Gentrifying Neighborhoods, 2003–2014

	All Movers			Intracity Movers		
	Origin	Destination	Change	Origin	Destination	Change
Economic indicators						
Median household income						
All Movers	\$36,362	\$58,351	\$21,990***	\$34,968	\$44,017	\$9,049***
Low-Score Movers	\$33,000	\$44,813	\$11,812***	\$32,000	\$35,560	\$3,560***
Unemployment rate						
All Movers	12.7%	11.1%	-1.6%***	13.6%	14.2%	0.6%***
Low-Score Movers	14.7%	14.6%	-0.1%	15.3%	17.5%	2.2%***
Median home value						
All Movers	\$197,594	\$237,395	\$39,801***	\$182,602	\$172,945	-\$9,657***
Low-Score Movers	\$158,957	\$155,657	-\$3,300	\$151,570	\$116,044	-\$35,526***
Quality-of-life indicators						
Violent crime per 1,000 residents						
All Movers	7.7	5.7	-2.0***	7.9	7.2	-0.8***
Low-Score Movers	9.0	8.0	-1.0***	9.3	9.3	0.1
Combined percentage of 4th grade students proficient in reading and math^a						
All Movers	112.0	119.4	7.5***	109.7	104.5	-5.2***
Low-Score Movers	98.8	101.7	2.9**	97.1	90.6	-6.5***
Demographic indicators						
Percent non-Hispanic black						
All Movers	34.6%	28.4%	-6.2%***	39.6	42.1	2.5%***
Low-Score Movers	47.7%	46.3%	-1.4%	51.6	58.8	7.2%***

Note: ***, **, * represent significant at 0.01, 0.05, or 0.1 level, respectively; authors' calculations using data from Census 2000, 2009–2013 American Community Survey, the FRBNY Consumer Credit Panel/Equifax, and other sources.

^a If 100 percent of students were proficient in each subject, the value would be 200.

Additionally, the demographic characteristics of outmovers' destination neighborhoods varied significantly, based on the mover's risk score. Low-score movers from gentrifying neighborhoods were more likely to move to tracts with a similar share of non-Hispanic black residents and a lower share of adults who have attained a college degree (Table 4). However, low-score intracity movers were dispersed into neighborhoods that were predominantly non-Hispanic black. While the CCP data do not provide information on consumers' income or racial or ethnic background, these patterns do raise concerns about the potential for gentrification to reinforce within-city economic and racial disparities. The results have been generally consistent when we examine movers' outcomes at the neighborhood cluster level, which enables a more direct comparison (see Appendix).

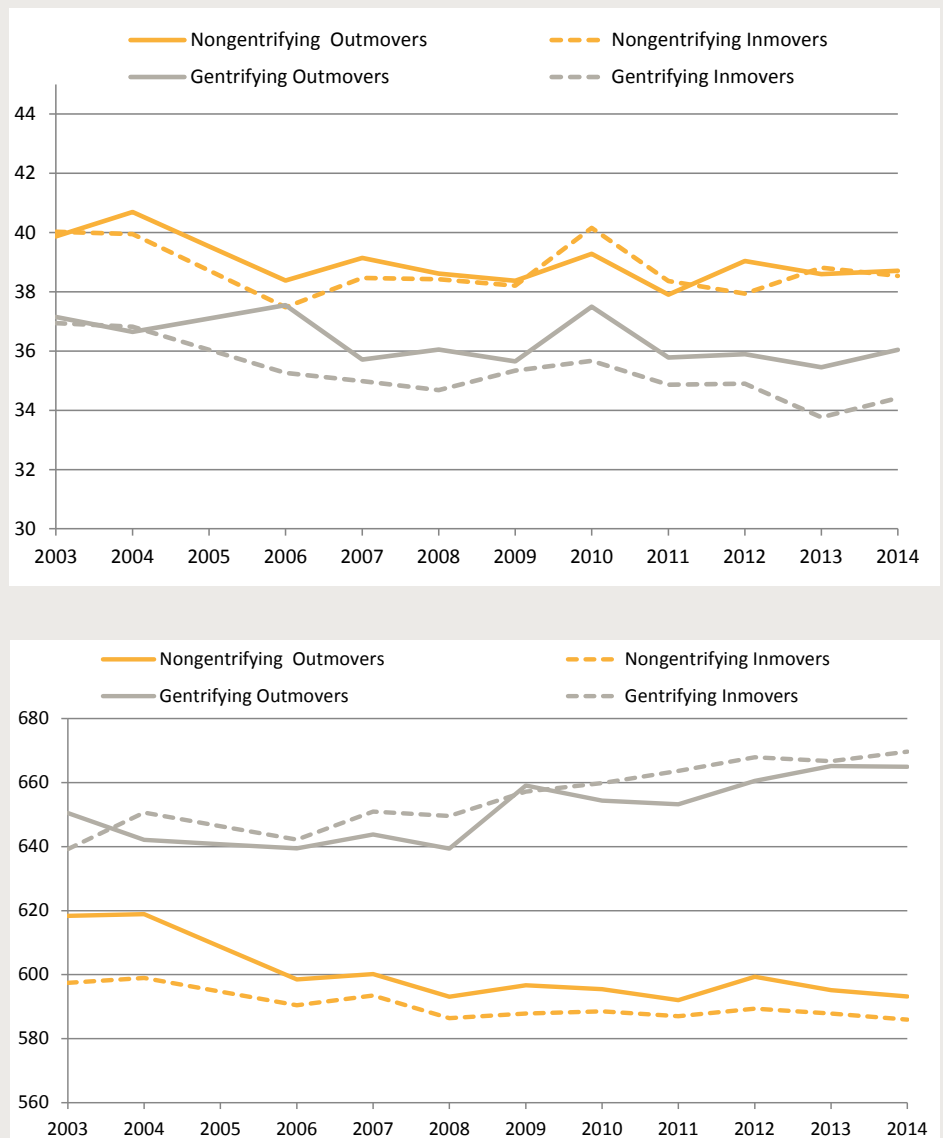
It is worth noting that even though low-score movers from gentrifying neighborhoods did not see the same improvements in quality of life as did their higher-score counterparts, they did not appear to end up worse off than low-score movers from nongentrifying neighborhoods. Still, our results suggest that while more vulnerable residents in gentrifying neighborhoods are not necessarily more likely to move than others, they do have a higher risk of downward mobility.

4. Who Is Moving into Gentrifying Neighborhoods?

An examination of the characteristics of in-movers to, as

FIGURE 5

Mean Age (Top) and Mean Credit Score (Bottom) of Movers in Gentrifying and Nongentrifying Neighborhoods, Philadelphia

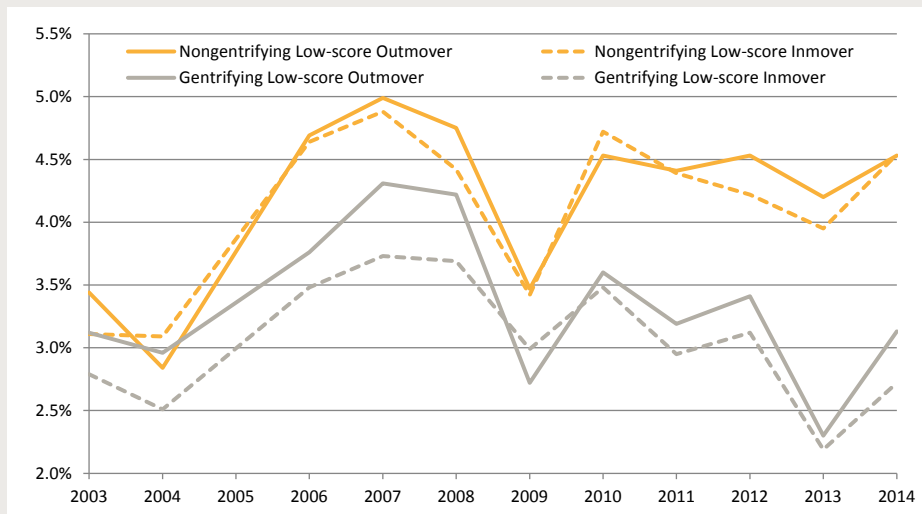


Note: Individuals 18–84 years old only; authors' calculations using data from the FRBNY Consumer Credit Panel/Equifax.

well as outmovers from, gentrifying neighborhoods is crucial to better understand the sources of the neighborhood-level demographic shifts. The results suggest residents moving into gentrifying neighborhoods are more likely to be younger and have higher credit scores than outmovers in gentrifying neighborhoods and that they are more likely to have moved from higher-value

FIGURE 6

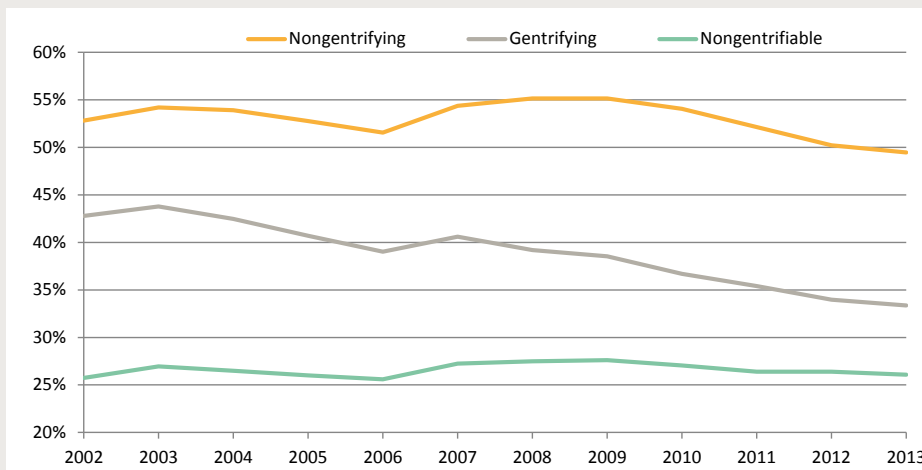
Share of Low-Score (<580) Inmovers and Outmovers Among All Residents by Neighborhood Type in Philadelphia



Note: Individuals 18–84 years old only; authors’ calculations using data from the FRBNY Consumer Credit Panel/Equifax.

FIGURE 7

Share of Residents Who Are Low-Score (<580) by Neighborhood Type in Philadelphia



Note: Individuals 18–84 years old only; authors’ calculations using data from the FRBNY Consumer Credit Panel/Equifax.

neighborhoods within or outside of Philadelphia. Individuals who move out of gentrifying neighborhoods are usually replaced by younger inmovers or inmovers with slightly higher credit scores; while outmovers from nongentrifying neighborhoods are usually replaced by individuals with lower credit scores with similar ages (Figure 5): Inmovers to gentrifying neighborhoods are generally younger than outmovers (about 1.3 years younger) and inmovers have slightly higher credit scores than outmovers on average (about 5 points higher). In contrast, inmovers tend to have similar ages compared with outmovers in nongentrifying neighborhoods, and the average credit scores of outmovers are consistently higher than that of inmovers (about 8 points higher) in nongentrifying neighborhoods (Figure 5, bottom). Regression results, which can be found in our full report, confirm the predictive power of individual’s age and credit score.

Figure 6 further shows that there are more low-score residents moving out of gentrifying neighborhoods each year than there are moving into these neighborhoods: The share of low-score outmovers has been higher than that of inmovers in gentrifying neighborhoods for 10 of the 11 cohorts (more low-score residents moved in than those who moved out at the very bottom of the housing crisis in 2009). As a result, the share of low-score residents had declined more substantially in gentrifying neighbor-

hoods than in others (Figure 7).¹² These results suggest that more vulnerable groups are being redistributed to less advantaged neighborhoods, and “indirect” displacement, which describes the decline in housing options for less advantaged residents in gentrifying neighborhoods, appears to play a more important role than the direct displacement of existing disadvantaged residents in explaining the demographic changes in gentrifying neighborhoods.

5. How Does Gentrification Affect the Financial Health of Existing Residents?

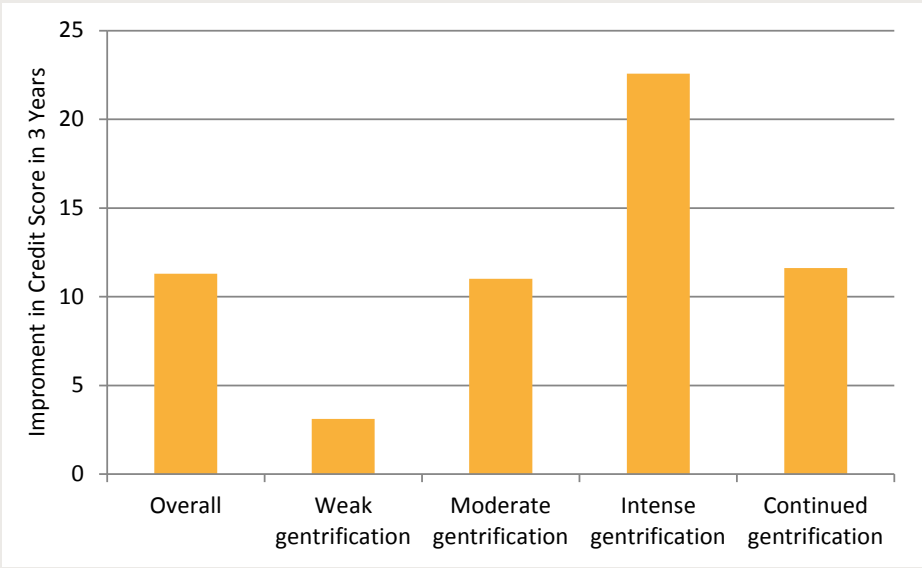
Gentrification is found to be positively associated with residents’ financial health but the benefits are not equally distributed. Residents who remained

in gentrifying neighborhoods experienced an average increase of 11 points in their credit scores in three years than did those in nongentrifying neighborhoods. The influx of investment, increased property values, and other potential positive effects from gentrification may contribute to improved access to credit and credit performance for those staying in gentrifying neighborhoods.

Nonetheless, there is significant heterogeneity in improvements in credit scores across neighborhoods and subpopulations for those who stay (Figure 8). Those who stay in neighborhoods in the more advanced stages of gentrification experienced greater improvement in their credit scores (an increase of 23 points in neighborhoods with intense gentrification, roughly doubling the average effect of being in a gentrifying neighborhood). However, the improvement in credit scores was more modest for residents in neighborhoods with moderate or weak gentrification, and not all those who stayed

FIGURE 8

Gentrification Type and Stayers’ Improvement in Their Credit Scores over Three Years



Note: Based on linear regressions models using pooled data from the FRBNY Consumer Credit Panel/Equifax (2002–2011); all significant at 0.01 level.

experienced the same level of improvement. The improvement is relatively less for low-score residents, longer-term residents, and for those without mortgages in gentrifying neighborhoods. For example, a low-score resident who stayed in a nongentrifying neighborhood had an improvement of 62.5 points over three years,¹³ but similar residents in gentrifying neighborhoods, after considering the general gentrification effect, have an improvement that is on average 5.7 points lower.

Moreover, the improvement in credit scores was uneven across those who moved. A move itself could be expensive and may incur various costs, which could damage an individual’s financial situation and credit rating. After controlling for a set of factors, we compared the change in their credit scores for stayers in gentrifying neighborhoods and movers from gentrifying neighborhoods who then stayed in the new neighborhoods. Those movers who moved to lower-income

¹² The sharper decline in the share of low-score residents in gentrifying neighborhoods could also be partly explained by the positive association between gentrification and residents’ credit ratings.

¹³ Low-score stayers see greater improvement in their credit scores in general. Because their credit scores have a lower starting point, it is relatively easier for their scores to improve.

neighborhoods experienced a more significant decline in credit scores (about 15.1 points lower in three years) than did those who stayed in gentrifying neighborhoods. In contrast, those who moved to higher-income neighborhoods experienced a slight improvement in their credit scores (2.1 points). Similarly, the credit scores of movers who moved within the city from gentrifying neighborhoods declined by 8.9 points, but movers to areas outside of the city experienced an improvement of 5.8 points. This may reflect both the effect of being in a lower-quality neighborhood on an individual's financial well-being and the unobserved financial challenges faced by the individuals who must move to different types of neighborhoods.

6. Summary

Gentrification brings increased investment and middle-class households to previously distressed low-income neighborhoods. Given the disinvestment in many center cities over the past several decades, the potential benefits from gentrification cannot be overlooked. This study demonstrates that gentrification is positively associated with a resident's overall financial health. However, the changes that come with gentrification also may have negative consequences for disadvantaged residents living in gentrifying neighborhoods. A major concern surrounding gentrification is whether it leads to the displacement of economically disadvantaged long-term residents by high-income and upwardly mobile younger residents.

This case study of Philadelphia illustrates a complex picture of the consequences of gentrification. Although

residents in gentrifying neighborhoods are slightly more likely to move in general, we do not find significant evidence of higher moving rates among more vulnerable residents; however, when more vulnerable residents move, they are more likely to move to lower-income neighborhoods and neighborhoods with slightly worse conditions on some quality-of-life indicators. In particular, low-credit score movers, many of whom were hit harder during the recent housing crisis, are more likely to move to neighborhoods with higher crime rates, lower-performing public schools, and worse economic conditions. In contrast, residents who moved and were better off financially move to significantly better neighborhoods. Furthermore, vulnerable residents are less likely to move to gentrifying neighborhoods over the period, indicating that housing in gentrifying neighborhoods became less available for less advantaged residents, thereby redistributing more vulnerable groups to more disadvantaged neighborhoods. The decline in affordable housing for low-income households to enter these neighborhoods, coupled with the influx of more advantaged residents, likely play greater roles than the outmigration of low-income households in explaining the demographic changes of gentrifying neighborhoods in Philadelphia. This pattern may have long-term and significant effects on vulnerable populations in terms of housing and job opportunities, financial health, and opportunities for their children. Policymakers should anticipate these possible negative consequences from gentrification and develop strategies to mitigate the negative effects for disadvantaged residents and to ensure that urban development is inclusive.

APPENDIX: GENTRIFYING NEIGHBORHOOD CLUSTERS

The following section examines how the outcomes of those who moved varied based on neighborhood context. The analyses described in the previous section were applied to each of five neighborhood clusters consisting of gentrifying tracts that were grouped together based on geographic location, economic condition, and tenure composition. Figure A1 illustrates these groupings.

In addition to the quality-of-life indicators discussed previously, indicators reflecting access to fixed guideway rail transportation¹⁴ and neighborhood commercial amenities¹⁵ were examined at the neighborhood cluster level. The commercial amenities included bank or credit union branches,¹⁶ full-service grocery stores,¹⁷ and child-care centers.¹⁸ For each of these indicators, the share of consumers in each neighborhood cluster whose origin census block was within a quarter mile (assumed to be a walkable distance) of the given amenity was compared with the share of consumers whose destination block was within a quarter mile. These indicators were only examined for those who moved within Philadelphia, where nearly one in three households did not have access to a car in 2013.¹⁹ See the detailed summary tables in each section for a selection

¹⁴ This includes all fixed guideway rail stations operated in Philadelphia by SEPTA and PATCO. Geocoded rail station locations were accessed through SEPTA and the New Jersey Geographic Information Network (for PATCO stations).

¹⁵ The locations of commercial amenities were obtained through a geocoded database from the Esri Business Analyst application for the years 2006–2012. Indicator values for 2006 were applied to the 2003–2006 study years; indicator values for 2012 were applied to the 2012–2014 study years.

¹⁶ Identified by the 8-Digit NAICS Codes: 52211002, 52211003, 52211005, 52213003, 52213005, and 52213006. Locations with zero employees were excluded.

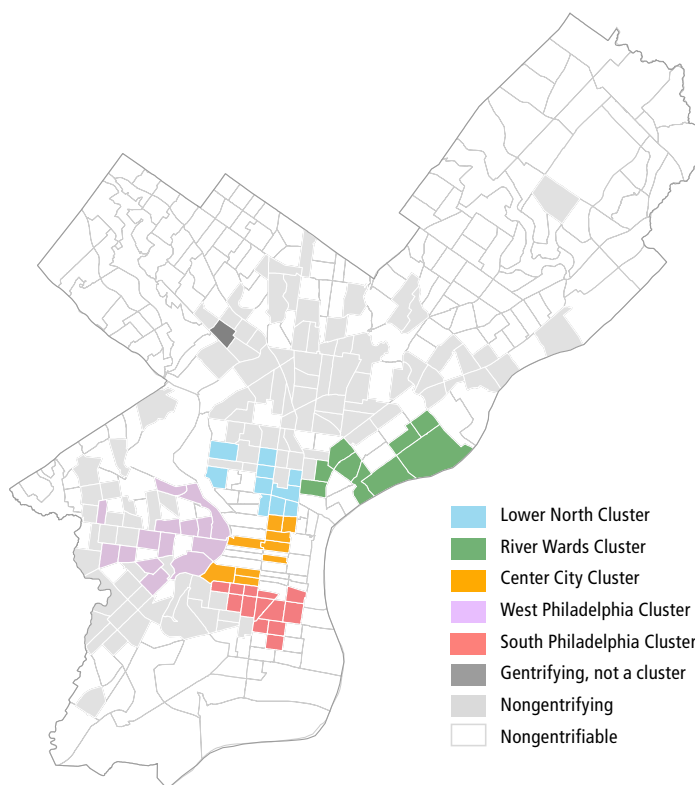
¹⁷ Identified by the 8-Digit NAICS Codes: 44511001 and 44511003. Nonchain locations with sales volumes below \$1 million, wholesale retailers, and delis/gas station stores were excluded.

¹⁸ Identified by the 8-Digit NAICS Codes: 62441001, 62441002, 62441003, 62441005, 62441006, 62441008.

¹⁹ Authors' calculations using 2013 American Community Survey estimates for Philadelphia County, Pennsylvania, Table B08201: Household Size by Vehicles Available.

FIGURE A1

Gentrifying Neighborhood Clusters in the City of Philadelphia



Source: Authors' definition based on Census 2000 and 2009–2013 American Community Survey data and U.S. Census TIGER/Line Shapefiles.

of neighborhood economic, demographic, and quality-of-life indicators for each cluster.

Overall, outcomes were least favorable for low-score movers from the Center City and, to a lesser extent, West Philadelphia clusters. In particular, intracity low-score movers from these clusters largely ended up in neighborhoods with lower home values, higher unemployment rates, and lower-performing elementary schools. Movers from the River Wards and South Philadelphia clusters fared somewhat better, with low-score movers ending up in neighborhoods that had similar or

stronger economic and quality-of-life indicators.²⁰ Move quality was highest for movers from the North Philadelphia cluster, with even intracity low-score movers seeing improvements in their neighborhoods' profiles. However, this is partly because many of the tracts in this cluster continued to be significantly distressed during the study period, despite rising rents and home values and the influx of college-educated adults. Evidence of demographic turnover was strongest in the South Philadelphia and Center City clusters, where low-score movers who started out in tracts with relatively large shares of non-Hispanic black residents moved to tracts in which the share was significantly higher.

Differences in neighborhood cluster results may, in part, be attributable to the differing intensities of gentri-

fication in each cluster's component tracts. Low-score movers were more likely to see declines in economic and quality-of-life indicators if they were leaving tracts undergoing intense gentrification — such as those in the Center City cluster — or tracts that had begun gentrifying prior to the study period. By contrast, disparities were milder for movers from moderate and weak gentrification tracts (as with many of those in the Lower North and River Wards clusters), though, in absolute terms, the destinations of low-score movers from these tracts had worse economic and quality-of-life profiles than did the destinations of low-score movers from more intensely gentrified tracts. The following section provides a more in-depth look at outcomes for movers from each of the neighborhood clusters.

²⁰ The exception is a statistically significant increase in the unemployment rate for low-score movers from the South Philadelphia cluster.

CENTER CITY

The Center City neighborhood cluster comprises tracts from Philadelphia's central business district and adjacent residential neighborhoods (Figure A2). As the city's downtown, Center City has been the epicenter of recent reinvestment, leading to growing demand for housing in and around this regional job center.²¹ While neighborhood names can change during the process of gentrification,²² some of the neighborhoods included in this cluster are commonly referred to as Center City West, Graduate Hospital, Chinatown, and Callowhill. The Center City neighborhood cluster has one of the strongest housing markets in the city — during the study period, the average median home value in these tracts grew from slightly more than \$154,000 to more than \$315,000. Although homeownership rates were higher in some tracts, the majority of residents in this cluster were renters in 2009–2013.

Overall, neighborhood outcomes for those who moved from Center City were heavily mixed (Tables A1–A3). Generally, high-score movers were able to access neighborhoods with comparable or stronger economic outlooks, similar demographic profiles, and equal or better performance on quality-of-life indicators. By contrast, low-score movers (and, to a lesser extent, mid-score movers) moved to neighborhoods that appear to offer more limited economic opportunity and lower quality of life. These neighborhoods were more likely to be communities of color, particularly for those who moved within the city. These patterns are more consistent with direct displacement, rather than the more gradual indirect displacement observed in the aggregate. This may be attributable to the intensity of the gentrification in Center City tracts, all of which were either in advanced stages of gentrification or gentrified rapidly during the study period.

²¹ Panaritis, Maria. "Center City District: Housing Boom Continues." Philly.com, February 2015. Available at http://articles.philly.com/2015-02-19/news/59273580_1_girard-young-professionals-new-housing.

²² Hwang, Jackelyn. "The Social Construction of a Gentrifying Neighborhood; Reifying and Redefining Identity and Boundaries in Inequality." *Urban Affairs Review*, first published online on March 2, 2015; doi:10.1177/1078087415570643.



1200 block of Noble Street

FIGURE A2

Center City Cluster



Source: Authors' definition based on Census 2000 and 2009–2013 American Community Survey data and U.S. Census TIGER/Line Shapefiles; parks, street centerlines, building footprints, and water features are from the city of Philadelphia.

Table A1 Changes in Center City Cluster Characteristics from 2000 to 2009–2013

	2000	2009–2013	Percent Change
Total population	23,950	29,154	21.7%
% non-Hispanic white	40.8%	56.2%	67.4%
% non-Hispanic black	41.6%	18.7%	-45.3%
Average median household income	\$28,414	\$53,809	89.4%
Average median rent	\$707	\$994	40.7%
Average median home value	\$154,071	\$315,245	104.6%

Source: Authors' calculations using data from Census 2000 and 2009–2013 American Community Survey.

Table A2 Mobility Patterns for Center City Cluster Outmovers, All Moves 2003–2014

	All Movers	Low-Score Movers
Percent moving within Philadelphia MSA	64.6%	76.2%
Percent moving within Philadelphia	45.7%	60.6%
Percent moving within 1 mile of cluster	30.1%	29.1%
Percent moving within 3 miles of cluster	36.6%	42.0%
Percent moving outside Philadelphia MSA	35.4%	23.8%
Percent moving to lower-income tract	32.5%	55.3%

Note: Individuals 18 to 84 years old only; excludes moves from 2005; authors' calculations using data from the FRBNY Consumer Credit Panel/Equifax; MSA represents metropolitan statistical area.

Table A3 Changes in Selected Indicators for Movers from Center City Cluster, All Moves 2003–2014

	All Movers			Intracity Movers		
	Origin	Destination	Difference	Origin	Destination	Difference
Neighborhood economic conditions						
Median household income						
All movers	\$47,235	\$67,117	\$19,882***	\$48,392	\$51,568	\$3,176***
Low-score movers	\$48,648	\$49,638	\$990	\$50,112	\$40,664	-\$9,448***
Unemployment rate						
All movers	8.8%	8.8%	0.0%	8.8%	10.6%	1.7%***
Low-score movers	9.2%	11.9%	2.7%***	9.2%	14.0%	4.7%***
Median home value						
All movers	\$299,706	\$305,315	\$5,609	\$301,188	\$243,793	-\$57,395***
Low-score movers	\$289,381	\$200,797	-\$88,584***	\$290,003	\$164,731	-\$125,272***
Demographics						
Percent non-Hispanic black						
All movers	20.6%	19.6%	-0.9%	23.4%	29.8%	6.5%***
Low-score movers	27.0%	36.5%	9.5%***	28.7%	46.9%	18.2%***
Quality of life						
Rate of violent crime per 1,000 residents						
All movers	7.6	4.7	-3.0***	7.4	5.9	-1.5***
Low-Score movers	8.1	7.0	-1.1*	7.7	8.0	0.3
Combined percent of 4th grade students scoring proficient or higher in math and reading tests						
All movers	134.1	129.7	-4.4***	133.2	116.1	-17.1***
Low-score movers	130.8	108.3	-22.6***	129.7	101.0	-28.7***
Proximity to amenities						
Share of all movers within ¼ mile of bank or credit union branch				82.8%	56.2%	-26.6***
Share of all movers within ¼ mile of child-care facility				81.7%	80.5%	-1.2%
Share of all movers within ¼ mile of supermarket				52.9%	36.1%	-16.8%***
Share of all movers within ¼ mile of rail transit station				79.5%	62.2%	-17.3%***

Note: ***, **, * represent significant at 0.01, 0.05, or 0.1 level, respectively; individuals 25–84 years old only; excludes moves from 2005; for quality-of-life indicators "All Movers" refers to movers within the Philadelphia-Camden-Wilmington MSA; authors' calculations using data from Census 2000, 2009–2013 American Community Survey, the FRBNY Consumer Credit Panel/Equifax (Equifax risk score data only), and other sources.

LOWER NORTH

The Lower North neighborhood cluster includes tracts representing a number of neighborhoods that are frequently cited in Philadelphia-centric discussions of gentrification, including Brewerytown, Francisville, and Ludlow (Figure A3).²³ The eastern portion of the cluster includes neighborhoods in close proximity to Temple University, where demand from the student rental housing market had been cited as a key gentrification pressure.²⁴ Gentrification in the western portion of the cluster has coincided with the growth of the Center City housing market, of which the more affluent Fairmount neighborhood immediately to the south is a part.

Recent reinvestment notwithstanding, neighborhoods in the Lower North continue to experience significant economic hardship. For most measures, movers from the Lower North cluster — particularly those in the lowest risk score category — did not fare any better in absolute terms than movers from nongentrifying neighborhoods. While movers from gentrifying Lower North tracts by and large saw improvements in the performance of quality-of-life and economic indicators, it is unclear if gentrification played a role in these outcomes (Tables A4–A6).

It is important to acknowledge some of the CCP data set's inherent limitations with regards to examining neighborhoods such as those of the Lower North cluster. While we do not know how representative the CCP data set is with respect to a consumer's race, ethnicity, and income, research suggests that low-income and black households are less likely to be connected to the types of mainstream financial institutions that would report to Equifax,²⁵ making the potential for underrepresentation of key vulnerable populations more acute for this cluster than in the analysis overall.

²³ Young, Earni. "The Problems and the Promise: Gentrification in Philadelphia." Philly.com, October 2014. Available at www.philly.com/philly/news/Gentrification_in_Philadelphia.html.

²⁴ Moskowitz, Peter. "Philadelphia Universities' Expansion Drove Wider Gentrification, Tension." Aljazeera America, December 2014. Available at <http://america.aljazeera.com/articles/2014/12/31/philadelphia-universitiesexpansiondrovewidergentrificationtension.html>.

²⁵ The FDIC's 2013 National Survey of Unbanked and Underbanked Households found that 20.5 percent of black households were unbanked, compared with 3.6 percent of white households. Among households with family incomes below \$15,000, 27.7 percent were unbanked.



Ogden and Ridge Avenue

FIGURE A3

Lower North Cluster



Source: Authors' definition based on Census 2000 and 2009–2013 American Community Survey data and U.S. Census TIGER/Line Shapefiles; parks, street centerlines, building footprints, and water features are from the city of Philadelphia.

Table A4 Changes in Lower North Cluster Characteristics from 2000 to 2009–2013

	2000	2009–2013	Percent Change
Total population	31,618	32,837	3.9%
% non-Hispanic white	4.6%	24.5%	454.7%
% non-Hispanic black	89.1%	65.7%	-23.4%
Average median household income	\$23,601	\$22,455	-4.9%
Average median rent	\$442	\$590	33.3%
Average median home value	\$58,156	\$171,587	195%

Source: Authors' calculations using data from Census 2000 and 2009–2013 American Community Survey.

Table A5 Mobility Patterns for Lower North Cluster Outmovers, All Moves 2003–2014

	All Movers	Low-Score Movers
Percent moving within Philadelphia MSA	79.5%	85.8%
Percent moving within Philadelphia	65.6%	76.4%
Percent moving within 1 mile of cluster	24.6%	24.2%
Percent moving within 3 miles of cluster	47.0%	50.7%
Percent moving outside Philadelphia MSA	20.5%	14.2%
Percent moving to lower-income tract	17.2%	23.6%

Note: Individuals 18 to 84 years old only; excludes moves from 2005; authors' calculations using data from the FRBNY Consumer Credit Panel/Equifax; MSA represents metropolitan statistical area.

Table A6 Changes in Selected Indicators for Movers from Lower North Cluster, All Moves 2003–2014

	All Movers			Intracity Movers		
	Origin	Destination	Difference	Origin	Destination	Difference
Neighborhood economic conditions						
Median household income						
All movers	\$25,585	\$47,705	\$22,120***	\$24,958	\$37,645	\$12,687***
Low-score movers	\$23,272	\$38,879	\$15,607***	\$23,119	\$32,661	\$9,542***
Unemployment rate						
All movers	19.4%	14.1%	-5.3%***	19.6%	16.7%	-2.9***
Low-score movers	20.3%	16.8%	-3.5%***	20.3%	19.0%	-1.3%**
Median home value						
All movers	\$144,102	\$182,225	\$38,124***	\$140,987	\$139,199	-\$1,788
Low-score movers	\$127,503	\$131,732	\$4,229	\$125,735	\$108,055	-\$17,680***
Demographics						
Percent non-Hispanic black						
All movers	69.2%	43.4%	-25.8%***	70.7%	54.8%	-15.9%***
Low-score movers	72.6%	54.9%	-17.7%***	73.5%	62.8%	-10.7%***
Quality of life						
Rate of violent crime per 1,000 residents						
All movers	11.7	8.0	-3.8***	11.9	9.2	-2.7***
Low-Score movers	12.2	9.7	-2.6***	12.3	10.6	-1.7***
Combined percent of 4th grade students scoring proficient or higher in math and reading tests						
All movers	84.1	104.6	20.5***	82.9	93.4	10.5***
Low-score movers	80.5	93.6	13.1***	80.1	85.9	5.8***
Proximity to amenities						
Share of all movers within ¼ mile of bank or credit union branch				35.6%	37.3%	1.8%
Share of all movers within ¼ mile of child-care facility				88.1%	79.5%	-8.6%***
Share of all movers within ¼ mile of supermarket				28.0%	21.4%	-6.7%***
Share of all movers within ¼ mile of rail transit station				54.4%	49.0%	-5.4%**

Note: ***, **, * represent significant at 0.01, 0.05, or 0.1 level, respectively; individuals 25–84 years old only; excludes moves from 2005; for quality-of-life indicators "All Movers" refers to movers within the Philadelphia-Camden-Wilmington MSA; authors' calculations using data from Census 2000, 2009–2013 American Community Survey, the FRBNY Consumer Credit Panel/Equifax (Equifax risk score data only), and other sources.

RIVER WARDS

The River Wards neighborhood cluster encompasses a number of neighborhoods that have strong historical ties to Philadelphia's industrial economy. This collection of tracts roughly corresponds to the Fishtown and Port Richmond neighborhoods, as well as the southeastern portion of the Kensington neighborhood (Figure A4). Gentrification pressures in Kensington and Fishtown can, in large part, be attributed to spillover development from the more affluent Northern Liberties neighborhood immediately south, which had gentrified in the decade prior to the study period.²⁶ The immediate cause of gentrification in Port Richmond is less clear, though easy access to job centers in Center City and West Philadelphia via the Market-Frankford rail line is likely a contributing factor.²⁷

Demographically, the River Wards cluster differs from the city as a whole with a high share of non-Hispanic whites and a sizable and growing Hispanic community. Overall, movers from the River Wards cluster ended up in neighborhoods that performed significantly better on economic and quality-of-life indicators, though there continued to be disparities in outcomes for low- and high-score movers (Tables A7–A9). With the exception of school performance (and, potentially, rail transit access), low-score intracity movers' destination tracts were comparable with their origins. However, for low-score movers overall, outcomes were largely favorable. The relatively high rate of homeownership in these tracts — which could enable residents to capture the benefits of property value appreciation — may be a contributing factor.

²⁶ Beauregard (1990) noted a "slow pace of gentrification" (p. 857) in Northern Liberties a decade prior to the beginning of the study period, describing the trajectory of neighborhood change as starting from the Society Hill and Spring Garden neighborhoods to the south and moving northward towards Fishtown. Ironically, he describes the prospect of Fishtown's gentrification as "seemingly unlikely" (p. 857). Beauregard, R. A. (1990). "Trajectories of Neighborhood Change: The Case of Gentrification." *Environment and Planning A* 22(7) 855–874.

²⁷ Heavens, Alan J. "Town by Town: Port Richmond is Getting Younger." Philly.com, June 2013. Available at www.philly.com/philly/business/real_estate/town-by-town/20130623_Town_By_Town__Port_Richmond_is_getting_younger.html.



1400 block of Germantown Avenue

FIGURE A4

River Wards Cluster



Source: Authors' definition based on Census 2000 and 2009–2013 American Community Survey data and U.S. Census TIGER/Line Shapefiles; parks, street centerlines, building footprints, and water features are from the city of Philadelphia.

Table A7 Changes in River Wards Cluster Characteristics from 2000 to 2009–2013

	2000	2009–2013	Percent Change
Total population	26,343	24,881	-5.6%
% non-Hispanic white	69.6%	67.6%	-8.1%
% non-Hispanic black	17.8%	19.9%	5.6%
Average median household income	\$36,511	\$39,131	7.2%
Average median rent	\$553	\$642	\$16.1%
Average median home value	\$56,048	\$143,398	155.8%

Source: Authors' calculations using data from Census 2000 and 2009–2013 American Community Survey.

Table A8 Mobility Patterns for River Wards Cluster Outmovers, All Moves 2003–2014

	All Movers	Low-Score Movers
Percent moving within Philadelphia MSA	78.3%	79.8%
Percent moving within Philadelphia	57.5%	61.8%
Percent moving within 1 mile of cluster	24.0%	28.4%
Percent moving within 3 miles of cluster	40.0%	46.5%
Percent moving outside Philadelphia MSA	21.7%	20.2%
Percent moving to lower-income tract	29.7%	38.3%

Note: Individuals 18 to 84 years old only; excludes moves from 2005; authors' calculations using data from the FRBNY Consumer Credit Panel/Equifax; MSA represents metropolitan statistical area.

Table A9 Changes in Selected Indicators for Movers from River Wards Cluster, All Moves 2003–2014

	All Movers			Intracity Movers		
	Origin	Destination	Difference	Origin	Destination	Difference
Neighborhood economic conditions						
Median household income						
All movers	\$38,033	\$53,718	\$15,685***	\$36,944	\$40,720	\$3,776***
Low-score movers	\$37,391	\$47,084	\$9,693***	\$36,222	\$35,815	-\$407
Unemployment rate						
All movers	16.1%	11.9%	-4.2%***	16.5%	14.9%	-1.6%***
Low-score movers	16.6%	13.2%	-3.4%***	17.3%	16.3%	-0.9%
Median home value						
All movers	\$129,866	\$199,417	\$69,551***	\$127,737	\$151,809	\$24,072***
Low-score movers	\$126,645	\$172,293	\$45,648***	\$120,865	\$122,528	\$1,663
Demographics						
Percent Hispanic						
All movers	19.8%	14.1%	-5.8%***	21.8%	17.5%	-4.3%***
Low-score movers	20.5%	18.0%	-2.5%	21.7%	21.8%	0.1%
Quality of life						
Rate of violent crime per 1,000 residents						
All movers	6.3	5.2	-1.2***	6.5	6.4	-0.1
Low-Score movers	7.0	6.2	-0.7	7.3	7.6	0.3
Combined percent of 4th grade students scoring proficient or higher in math and reading tests						
All movers	123.5	123.4	0.0	123.1	110.6	-12.5***
Low-score movers	121.4	117.2	-4.2	120.6	104.8	-15.8***
Proximity to amenities						
Share of all movers within ¼ mile of bank or credit union branch				54.1%	46.5%	-7.6%***
Share of all movers within ¼ mile of child-care facility				50.7%	61.4%	10.8%***
Share of all movers within ¼ mile of supermarket				32.8%	22.8%	-10.0%***
Share of all movers within ¼ mile of rail transit station				60.0%	45.6%	-14.4%***

Note: ***, **, * represent significant at 0.01, 0.05, or 0.1 level, respectively; individuals 25–84 years old only; excludes moves from 2005; for quality-of-life indicators "All Movers" refers to movers within the Philadelphia-Camden-Wilmington MSA; authors' calculations using data from Census 2000, 2009–2013 American Community Survey, the FRBNY Consumer Credit Panel/Equifax (Equifax risk score data only), and other sources.

SOUTH PHILADELPHIA

The South Philadelphia cluster is a racially and economically diverse collection of neighborhoods sharing a common gentrification driver: spillover demand from the growing Center City housing market (Figure A5).²⁸ Broad Street, the major north-south corridor, is a dividing line between the Point Breeze neighborhood to the west and East Passyunk and Pennsport neighborhoods to the east. Point Breeze is a low-income, predominantly non-Hispanic black neighborhood that has seen development pressure as housing in the gentrifying Graduate Hospital neighborhood immediately to the north became increasingly expensive.²⁹ East Passyunk and Pennsport are predominantly non-Hispanic white neighborhoods (though Pennsport has growing Latino and Asian communities) that are immediately south of non-gentrifiable neighborhoods that were relatively high-income at the beginning of the study period.

As in the other neighborhood clusters, the extent to which movers' destinations performed better on neighborhood economic and quality-of-life indicators varied by risk score category (Tables A10–A12). Outcomes were best for mid- and high-score movers who left the city, but somewhat mixed for low-score movers, whose destination tracts had on average higher median home values but also higher unemployment rates. There was also some evidence of demographic turnover as low-score intracity movers, for whom the share of non-Hispanic black residents in their origin tracts was already higher than for movers in other score categories, moved to tracts in which the share was even greater.

²⁸ Chenevert, Bill. "The Gentrification of South Philly." *South Philly Review*, October 2014. Available at www.southphillyreview.com/news/The_gentrification_of_South_Philly-280934202.html.

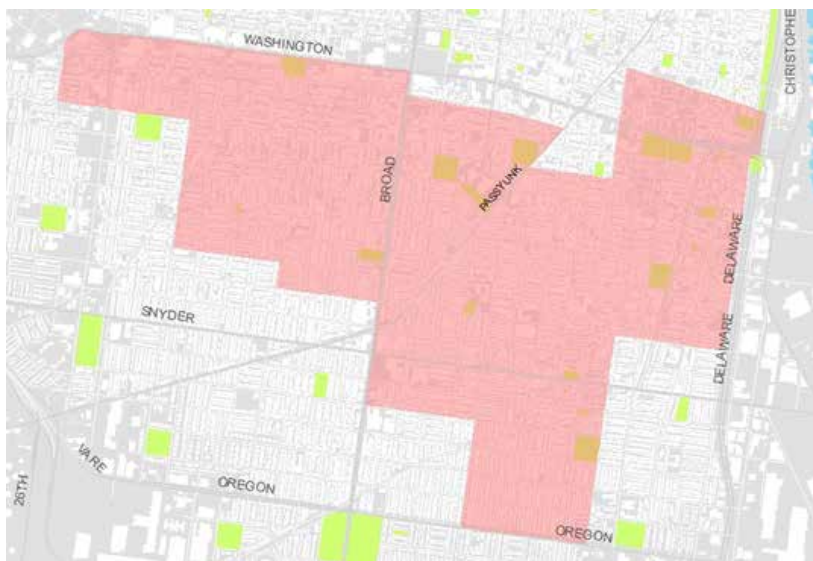
²⁹ As noted in Hwang (2015), many long-term South Philadelphia residents — particularly people of color — consider Graduate Hospital to be part of broader South Philadelphia. However, because of the greater similarity of its housing market and neighborhood economic characteristics, it has been included in the Center City cluster for the purposes of this study.



1100 block of Greenwich Street

FIGURE A5

South Philadelphia Cluster



Source: Authors' definition based on Census 2000 and 2009–2013 American Community Survey data and U.S. Census TIGER/Line Shapefiles; parks, street centerlines, building footprints, and water features are from the city of Philadelphia.

Table A10 Changes in South Philadelphia Cluster Characteristics from 2000 to 2009–2013

	2000	2009–2013	Percent Change
Total population	63,858	64,146	0.5%
% non-Hispanic white	43.1%	41.5%	-3.3%
% non-Hispanic black	34.7%	24.2%	-29.9%
Average median household income	\$33,219	\$36,164	8.9%
Average median rent	\$595	\$692	16.2%
Average median home value	\$63,075	\$167,409	165.4%

Source: Authors' calculations using data from Census 2000 and 2009–2013 American Community Survey.

Table A11 Mobility Patterns for South Philadelphia Cluster Outmovers, All Moves 2003–2014

	All Movers	Low-Score Movers
Percent moving within Philadelphia MSA	78.5%	78.9%
Percent moving within Philadelphia	55.8%	65.6%
Percent moving within 1 mile of cluster	28.2%	29.2%
Percent moving within 3 miles of cluster	40.4%	44.9%
Percent moving outside Philadelphia MSA	21.5%	21.7%
Percent moving to lower-income tract	23.5%	34.6%

Note: Individuals 18 to 84 years old only; excludes moves from 2005; authors' calculations using data from the FRBNY Consumer Credit Panel/Equifax; MSA represents metropolitan statistical area.

Table A12 Changes in Selected Indicators for Movers from South Philadelphia Cluster, All Moves 2003–2014

	All Movers			Intracity Movers		
	Origin	Destination	Difference	Origin	Destination	Difference
Neighborhood economic conditions						
Median household income						
All movers	\$36,419	\$55,319	\$18,900***	\$35,791	\$43,654	\$7,863***
Low-score movers	\$34,867	\$45,791	\$10,924***	\$34,420	\$37,868	\$3,448***
Unemployment rate						
All movers	12.1%	11.5%	-0.7%***	12.5%	13.9%	1.4%***
Low-score movers	12.9%	14.1%	1.2%***	13.3%	16.5%	3.3%***
Median home value						
All movers	\$151,872	\$213,839	\$61,967***	\$147,346	\$170,301	\$22,955***
Low-score movers	\$133,912	\$162,345	\$28,433***	\$130,846	\$131,776	\$930
Demographics						
Percent non-Hispanic black						
All movers	26.1%	26.3%	0.2%	28.9%	35.9%	7.0%***
Low-score movers	35.6%	40.8%	5.2%***	38.6%	50.2%	11.6%***
Quality of life						
Rate of violent crime per 1,000 residents						
All movers	6.8	5.7	-1.2***	7.1	7.0	-0.1
Low-Score movers	8.3	8.2	-0.1	8.6	9.1	0.6
Combined percent of 4th grade students scoring proficient or higher in math and reading tests						
All movers	105.6	118.6	13.0***	104.0	106.6	2.6*
Low-score movers	96.1	103.1	7.1***	94.7	95.1	0.5
Proximity to amenities						
Share of all movers within ¼ mile of bank or credit union branch				58.3%	49.9%	-8.4%***
Share of all movers within ¼ mile of child-care facility				93.7%	80.3%	-13.4%***
Share of all movers within ¼ mile of supermarket				31.9%	28.3%	-3.6%**
Share of all movers within ¼ mile of rail transit station				51.5%	47.4%	-4.1%**

Note: ***, **, * represent significant at 0.01, 0.05, or 0.1 level, respectively; individuals 25–84 years old only; excludes moves from 2005; for quality-of-life indicators "All Movers" refers to movers within the Philadelphia-Camden-Wilmington MSA; authors' calculations using data from Census 2000, 2009–2013 American Community Survey, the FRBNY Consumer Credit Panel/Equifax (Equifax risk score data only), and other sources.

WEST PHILADELPHIA

The West Philadelphia neighborhood cluster is primarily composed of neighborhoods surrounding the University of Pennsylvania and Drexel University, though it also includes some tracts along the Baltimore Avenue commercial corridor and Market-Frankford Line (Figure A6). Powelton, Spruce Hill, Walnut Hill, and Cedar Park are some neighborhood names associated with these tracts. As in the communities surrounding Temple University, pressure from the student rental market is an often-cited driver of gentrification.³⁰ However, the universities in West Philadelphia — particularly the University of Pennsylvania — have played a much more active role in shaping development in surrounding neighborhoods.³¹

As with those of the South Philadelphia cluster, the tracts within the West Philadelphia cluster vary significantly in their demographic composition and economic characteristics. For some indicators, this heterogeneity complicated analysis by risk score group, since it was clear that movers in different risk score groups lived in very different neighborhoods. Still, there were clear differences in outcomes for movers with different credit scores. Despite improvements for movers overall, low-score movers' destination tracts had comparably high unemployment rates and significantly lower home values than their origin tracts. Both low- and mid-score intracity movers ended up in tracts with significantly lower median home values and higher unemployment rates than in those they left. While changes in quality-of-life indicators were minimal for movers in all three risk score groups, this meant that low-score movers continued to live in neighborhoods with relatively high rates of violent crime and low-performing elementary schools (Tables A13–A15).



800 block of North 48th Street

FIGURE A6

West Philadelphia Cluster



Source: Authors' definition based on Census 2000 and 2009–2013 American Community Survey data and U.S. Census TIGER/Line Shapefiles; parks, street centerlines, building footprints, and water features are from the city of Philadelphia.

³⁰ Moskowitz (2014)

³¹ See Kromer, John, and Kerman, Lucy. *West Philadelphia Initiatives: A Case Study in Urban Revitalization*. Fels Institute of Government, University of Pennsylvania. September 2004. Available at www.fels.upenn.edu/news/new-report-urban-revitalization-1.

Table A13 Changes in West Philadelphia Cluster Characteristics from 2000 to 2009–2013

	2000	2009–2013	Percent Change
Total population	59,444	59,357	-0.1%
% non-Hispanic white	21.5%	29.8%	38.5%
% non-Hispanic black	67.4%	52.8%	-21.9%
Average median household income	\$25,481	\$32,040	25.7%
Average median rent	\$580	\$969	67.1%
Average median home value	\$78,876	\$184,487	133.9%

Source: Authors' calculations using data from Census 2000 and 2009–2013 American Community Survey.

Table A14 Mobility Patterns for West Philadelphia Cluster Outmovers, All Moves 2003–2014

	All Movers	Low-Score Movers
Percent moving within Philadelphia MSA	69.8%	83.5%
Percent moving within Philadelphia	50.4%	64.5%
Percent moving within 1 mile of cluster	28.7%	36.9%
Percent moving within 3 miles of cluster	40.0%	51.9%
Percent moving outside Philadelphia MSA	30.2%	16.5%
Percent moving to lower-income tract	22.8%	30.5%

Note: Individuals 18 to 84 years old only; excludes moves from 2005; authors' calculations using data from the FRBNY Consumer Credit Panel/Equifax; MSA represents metropolitan statistical area.

Table A15 Changes in Selected Indicators for Movers from West Philadelphia Cluster, All Moves 2003–2014

	All Movers			Intracity Movers		
	Origin	Destination	Difference	Origin	Destination	Difference
Neighborhood economic conditions						
Median household income						
All movers	\$31,631	\$54,048	\$22,417***	\$30,730	\$39,507	\$8,777***
Low-score movers	\$29,177	\$41,648	\$12,471***	\$28,583	\$32,247	\$3,664***
Unemployment rate						
All movers	12.8%	11.6%	-1.2%***	13.5%	15.0%	1.5%***
Low-score movers	15.0%	15.3%	0.2%	15.3%	18.1%	2.8%***
Median home value						
All movers	\$201,224	\$225,228	\$24,004***	\$187,956	\$158,592	-\$29,363***
Low-score movers	\$156,106	\$139,051	-\$17,055***	\$153,183	\$104,451	-\$48,732***
Demographics						
Percent non-Hispanic black						
All movers	48.2%	37.9%	-10.3%***	55.3%	57.1%	1.8%
Low-score movers	63.9%	58.6%	-5.3%***	67.5%	73.1%	5.6%***
Quality of life						
Rate of violent crime per 1,000 residents						
All movers	7.0	6.5	-0.5***	7.3	8.0	0.7***
Low-Score movers	8.7	8.5	-0.3	8.8	10.0	1.1***
Combined percent of 4th grade students scoring proficient or higher in math and reading tests						
All movers	110.1	112.0	1.9	108.3	97.5	-10.8
Low-score movers	92.9	95.7	2.8	92.4	83.4	-8.9***
Proximity to amenities						
Share of all movers within ¼ mile of bank or credit union branch				28.4%	36.7%	8.3%***
Share of all movers within ¼ mile of child-care facility				88.4%	81.8%	-6.6%***
Share of all movers within ¼ mile of supermarket				26.2%	26.7%	0.5%
Share of all movers within ¼ mile of rail transit station				80.2%	53.4%	-26.8%***

Note: ***, **, * represent significant at 0.01, 0.05, or 0.1 level, respectively; individuals 25–84 years old only; excludes moves from 2005; for quality-of-life indicators "All Movers" refers to movers within the Philadelphia-Camden-Wilmington MSA; authors' calculations using data from Census 2000, 2009–2013 American Community Survey, the FRBNY Consumer Credit Panel/Equifax (Equifax risk score data only), and other sources.



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